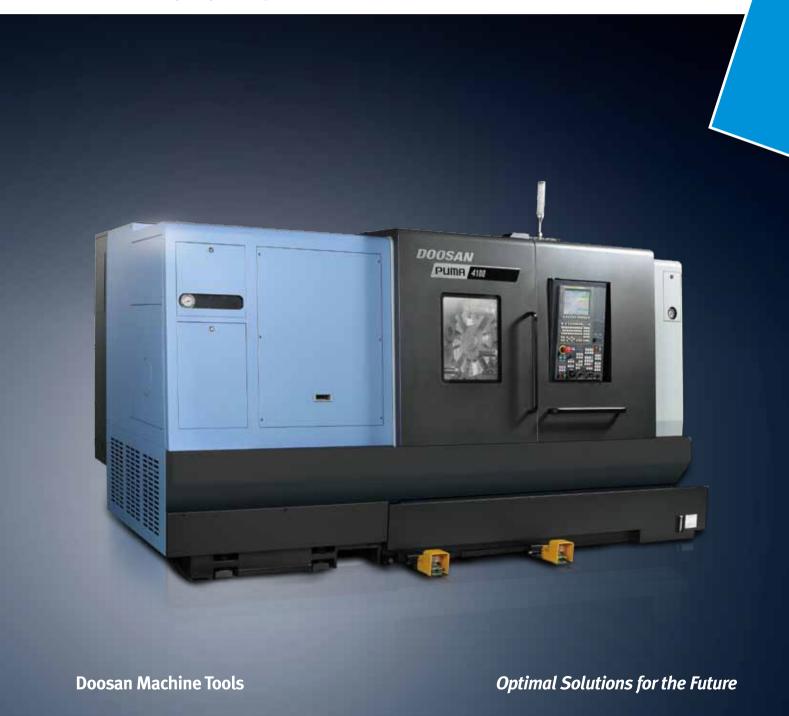


PUMA 4100 series

Powerful, Heavy Duty Turning Center



Various Line-up for Medium to Large Size Workpiece

PUMA 4100 series are optimized to heavy cutting of Medium to Large size workpiece by 550 mm (21.7 inch) of max. turning dia. & 1m (40 inch) or 2m (80 inch) of max. turning length.



May turning dia (a)	Std. chuck size	Max. turning length (b)			
Max. turning dia. (a)	Sta. Chuck Size	1000 mm (40 inch) range	2000 mm (80 inch) range		
550 mm (21.7 inch)	12 inch	PUMA 4100A [MA]	PUMA 4100LA [LMA]		
	15 inch	PUMA 4100B [MB]	PUMA 4100LB [LMB]		
	21 inch	PUMA 4100C [MC]	PUMA 4100LC [LMC]		

Haevy Duty Cutting Capacity

PUMA 4100 series have heavy cutting capability by maximized structure rigidity applying box guideway on bed & saddle



OD Turning

• Cutting speed: 210 m/min • Feedrate: 0.55 mm/rev

• Cutting depth: 6.8 mm (0.27 inch)



Face Milling

Face mill dia.: 63 mm (2.5 inch)Cutting speed: 176 m/minFeedrate: 900 mm/min

• Cutting depth: 6 mm (0.2 inch)



ID Turning (Roughing)

• Cutting speed: 280 m/min

• Feedrate: 0.1 mm/rev

• Cutting depth: 3 mm (0.1 inch)

• Tool length: 4.0D



U-drilling (3 axis)

Tool dia.: 25 mm (1.0 inch)Spindle speed: 2500 r/min

• Feedrate: 0.3 mm/rev



U-drilling (2 axis)

• Tool dia.: 80 mm (3.1 inch)

• Spindle speed : 750 r/min

• Feedrate: 0.1 mm/rev

* This test result come from under condition

1) Material : Steel (SM45C) 2) Test Machine : PUMA 4100B

- Main spindle motor: 26 / 22 kW (34.9 / 29.5 Hp) - Rotary tool motor: 11 / 5.5 kW (14.8 / 7.4 Hp)



21 inch chuck with automatic tool setter

Powerful Spindle

PUMA 4100 series offer high torque for heavy cutting by using 2 step DI gear box for 2 axis models & high torque motor or 2step barufaldi gear box for M models.

[2 axis Models]

12 • Mi

PUMA 4100A / LA

- Max. spindle speed : 3000 r/min
- Max. power (\$3 25%): 35 kW (47 Hp)
- Max. torque: 1584 N·m (1168 ft-lbs)

PUMA 4100B / LB

15 inch

21

- Max. spindle speed : 2000 r/min
- Max. power (S3 25%): 35 kW (47 Hp)
- Max. torque: 2379 N·m (1755 ft-lbs)

PUMA 4100C / LC

- Max. spindle speed: 1500 r/min
- Max. power (30 min): 37 kW (50 Hp)
- Max. torque: 3280 N·m (2419 ft-lbs)

[M Models]

PUMA 4100MA / LMA

- Max. spindle speed: 3000 r/min
- Max. power (30 min): 30 kW (40 Hp)
- Max. torque: 832 N·m (614 ft-lbs)

PUMA 4100MB / LMB

- Max. spindle speed: 2000 r/min
- Max. power (30 min): 30 kW (40 Hp)
- Max. torque: 1611 N·m (1188 ft-lbs)

PUMA 4100MC/LMC

- Max. spindle speed: 1500 r/min
- Max. power (30 min): 37 kW (50 Hp)
- Max. torque: 2432 N·m (1794 ft-lbs)

BMT 75P turret

Servo Driven Turret

PUMA 4100 series realize high speed & high reliability turret by adapted servo indexing motor.

[2 axis Turret]

PUMA 4100 A / LA / B / LB / C / LC

- Number of tool stations
- PUMA 4100 A / LA: 12 std. / 10 opt.
- PUMA 4100 B / LB / C / LC :
- 10 std. / 12 opt.
- Indexing time (1 station swivel)
- : 0.25 sec.

[Milling Turret]

PUMA 4100 MA / LMA / MB / LMB / MC / LMC

- Tool holder mount type: BMT 75P
- Number of tool stations: 12 std.
- Indexing time (1 station swivel): 0.25 sec
- Rotary tool speed: 4000 r/min
- Rotary tool power (1.5 min / continuous)
- : 23 / 7.5 kW (31 / 10 Hp)



Tailstock with live center

Stable Tailstock

2 types of tailstock & 2 types of center with big dia. quill can support long shaft item stably.

Tailstock type: Manual std.

Programmable opt.

Quill Diameter: 120 mm (4.7 inch)
Quill Travel: 120 mm (4.7 inch)
Center type: MT#6 live center std.

MT#5 built -in dead center opt.

Machine Specifications

	Features		Unit	PUMA 4100A [LA]	PUMA 4100B [LB]	PUMA 4100C [LC]	PUMA 4100MA [LMA]	PUMA 4100MB [LMB]	PUMA 4100MC [LMC]	
	Swing over bed		mm (inch)	790 (31.1)						
Capacity	Swing over saddle		mm (inch)	590 (23.2)						
	Recom. Turning diameter		mm (inch)	315 (12.4)	380 (15.0)	380 (15.0)	315 (12.4)	380 (15.0)	380 (15.0)	
	Max. Turning diameter		mm (inch)	550 (21.7) 560 (22.0)						
	Max. Turning length		mm (inch)	1079 [2129] (42.48 [83.82])	1043 [2093] (41.1 [82.4])	1024 [2074] (40.31 [81.7])	1014 [2064] (39.9 [81.3])	978 [2028] (38.5 [79.8])	959 [2009] (37.8 [79.1])	
	Chuck size		inch	12	15	21	12	15	21	
	Bar working diameter		mm (inch)	102 (4.0)	116.5 (4.6)	165.5 (6.5)	102 (4.0)	116.5 (4.6)	165.5 (6.5)	
Travels		X-axis	mm (inch)	352 (13.9)						
		Z-axis	mm (inch)	1105 [2155] (43.5 [84.8])						
Feedrates	Rapid Traverse Rate Z-axis	X-axis	m/min (ipm)	16 (629.9)						
		m/min (ipm)	20[18](787.4[708.7])							
Main spindle	Max. Spindle speed		r/min	3000	2000	1500	3000	2000	1500	
	Spindle nose		ASA	A2-11	A2-11	A1-15	A2-11	A2-11	A1-15	
	Spindle bearing diameter (Front)		mm (inch)	160 (6.3)	180 (7.1)	240 (9.4)	160 (6.3)	180 (7.1)	240 (9.4)	
	Spindle through hole		mm (inch)	115 (4.5)	132 (5.2)	181 (7.1)	-	-	-	
	Min. spindle Indexing angle (C-axis)		deg	-	-	-	0.001	-	0.001	
Turret	No. of tool stations		ea	12 / 10*	10 / 12*	10 / 12*	12			
	OD tool size		mm (inch)		32 x 32		25 x 25			
	Max. boring bar size		mm (inch)	ø60 ø60						
	Turret Indexing time (1 station swivel)		S	0.25						
	Max. Rotary tool speed		r/min	- 4000						
	Quill diameter		mm (inch)	120						
Tail Stock	Quill bore taper			#6						
	Quill travel		mm (inch)	120						
Motors	Main spindle motor power (30min./ cont.)		kW(Hp)	35 / 26 / 22 (46.9 / 34.9 / 29.5) (S3 25% / S3 60% / cont.)	35 / 26 / 22 (46.9 / 34.9 / 29.5) (S3 25% / S3 60% / cont.)	37 / 30 (49.6 / 40.2)	30 / 22 (40.2 / 29.5)	30 / 22 (40.2 / 29.5)	37 / 30 (49.6 / 40.2)	
	Rotary tool motor power (1.5 min / cont.)		kW(Hp)	-	- 23/7.5 (30.8/10.1)					
	Coolant pump motor power		kW(Hp)	0.4 / 0.9* / 1.5* / 3.7* / 4.0* (0.5 / 1.2* / 2.0* / 5.0* / 5.4*)						
Power source	Electric power supply (rated capacity)		kVA	38.40 [39.32]	42.25 [43.17]	51.05 [51.97]	43.18 [45.06]	43.18 [45.06]	51.98 [53.86]	
Machine Dimensions	Length		mm (inch)	4654[5774](181.1[227.3])						
	Width		mm (inch)	2055[2275](80.9[89.6])						
	Height		mm (inch)	2194[2222](86.4[87.5])						
	Weight		kg (lbs)	9450 [10900] (20834 [24030])	9950 [11400] (21935 [25133])	10450 [11900] (23038 [26235])	9600 [11100] (21164 [24471])	10100[11600] (22267[25574])	10600 [12100] (23369 [26676])	
NC system				DOOSAN-Fanuc i Series / Fanuc 32i						

^{*} options

Standard Feature

- Coolant supply equipment
- Foot switch
- Full enclosure chip and coolant shield
- Hand tool kit, including small hand tool for operations
- Hydraulic chuck & actuating cylinder
- Hydraulic power unit
- Leveling jack screw & plates
- Live center
- · Lubrication equipment
- Soft jaws
- Standard tooling kit (tool holders& boring sleeves)
- Work light
- The specifications and information above-mentioned may be changed without prior notice.
- For more details, please contact Doosan

Optional Feature

- Additional tool holders & sleeves
- Air blower for chuck jaw cleaning
- Air gun
- Automatic door with safety device
- · Automatic power off
- Built-in dead center
- Chip bucket
- Chip conveyor • Chuck clamp confirmation
- Chuck coolant
- Controller : DOOSAN FANUC i
- Coolant chiller
- Coolant gun
- Coolant pump motor power up • Dual presure chucking
- Hardended & ground hard jaws

- Hydraulic steady rest
- In-machine workpiece measuring system
- Linear scale
- Manual steady rest
- Mist collector
- Oil skimmer
- Proximity switches for chuck clamp detection
- Proximity switches for quill position detection
- Rotary type window wiper
- Signal tower (yellow, red, green)
- Special chucks
- Steady rest (manual / hydraulic / programmable)
- Tool monitoring system
- Tool setter (manual / auto)
- Twin chuck



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⁻ The specifications and information above-mentioned may be changed without prior notice.

⁻ For more details, please contact Doosan.